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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,412	10/30/2003	Ching Jen Chen	3303-23	7240

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03/16/2007

EXAMINER
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FRANTZ, JESSICA L

ART UNIT	PAPER NUMBER
3746	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/16/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/697,412

Applicant(s)

CHEN ET AL.

Examiner

Jessica L. Frantz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 5-9, 13-14, 18-23 and 32-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 10-12, 15-17 and 24-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. This election is made final. In regards to Applicant's traversal argument, the Examiner holds that the species requirement is proper. The multiple species would have produced serious burden on the examiner as they are drawn to inventions not suggested as usable together. Therefore, claims 5-9, 13-14, 18-23 and 32-33 are withdrawn.

### ***Claim Objections***

2. Claim 15 is objected to because of the following informalities: "having a thickness no more than" should be changed to --having a thickness of no more than-- and the phrase "forming an pumping chamber" should be changed to --forming a pumping chamber--. Appropriate correction is required.

3. Claim 27 is objected to because of the following informalities: "having a thickness no more than" should be changed to --having a thickness of no more than--. Appropriate correction is required.

4. Applicant is advised that should claim 29 be found allowable, claim 30 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 15 recites the limitation "said cavity" in the 6<sup>th</sup> line of the claim. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-4, 15-17 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Unger 2002/0144738 in view of Kohlhaas et al. 6,454,547. Unger teaches a micropump see paragraphs [0007], [0010] and [0018] made of a fully monolithic body formed from between about two layers of silicon and about five layers of silicon see paragraph [0012] and having a thickness of about no more than 12 microns see paragraphs [0163]-[0171]. Furthermore, it has been held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Swain et al., 33 CCPA (Patents) 1250, 156 F.2d 239, 70 USPQ 412; Minnesota Mining and Mfg. Co. v. Coe, 69 App. D.C. 217, 99 F.2d 986, 38 USPQ 213; Allen et al. v. Coe, 77 App. D.C. 324, 135 F.2d 11, 57 USPQ 136. Unger fails to teach the following claimed limitations that are taught by Kohlhaas: a method of pumping fluids (column 3, lines 6-9) where the

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pump includes a pumping chamber (not labeled see figure 2) wherein said pumping chamber includes an inlet 12 for drawing fluid therein and an outlet 13 for expelling said fluid out of said chamber, and structure 17, 18 for mechanically urging said fluid from said inlet 12 to said outlet 13 wherein the pumping chamber includes at least one rotatable disk 17 in fluid communication with said fluid and said structure 17, 18 for mechanically urging comprising said rotatable disk 17, wherein the rotatable disk 17 comprises at least one spiral shaped protrusion 18 extending from and concentric with the disk 17. Furthermore, Kohlhaas teaches that the pump body (not labeled see figure 2) comprises a base layer and side walls (also not labeled but clearly shown in figure 2) forming the pumping chamber. Kohlhaas teaches this structure for the purpose of creating a pump with the smallest possible dimensions which can be produced particularly cost-effectively (see Kohlhaas column 1, lines 35-38). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the pump structure of Unger with the pump structure of Kohlhaas in order to create a pump with the smallest possible dimensions which can be produced particularly cost-effectively (see Kohlhaas column 1, lines 35-38).

9. Claims 10-12, 24-26 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Unger 2002/0144738 in view of Kohlhaas et al. 6,454,547 and further in view of Romero et al. 5,955,801. The modified invention of Unger in view of Kohlhaas teaches the invention substantially as claimed and is discussed above but fails to teach the following claimed limitations that are taught by Romero: an electrostatic comb drive 18, 18' for rotating a rotatable disk 17 with at least one gear 16 in

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contact with both the electrostatic comb drive 18, 18' and rotatable disk 17 where the one gear 16 comprises a torque amplification gear train (as shown in figure 2) for the purpose of providing a constant rotation rate output power to a micromechanism (see column 2, lines 12-14). In regards to the specific claimed 12:1 torque amplification, it is held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Swain et al., 33 CCPA (Patents) 1250, 156 F.2d 239, 70 USPQ 412; Minnesota Mining and Mfg. Co. v. Coe, 69 App. D.C. 217, 99 F.2d 986, 38 USPQ 213; Allen et al. v. Coe, 77 App. D.C. 324, 135 F.2d 11, 57 USPQ 136. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have provided the electrostatic comb drive of Romero to the modified invention of Unger in view of Kohlhaas for the purpose of providing a constant rotation rate output power to a micromechanism (see Romero column 2, lines 12-14).

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Garcia 5,994,801.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica L. Frantz whose telephone number is 571-272-5822. The examiner can normally be reached on Monday through Friday 8:30a.m. - 5:00p.m. E.S.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ehud Gartenberg can be reached on (571) 272-4828. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*Jessica Inantz*

JF 3/7/2007

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